

**REMARKS**

Claims 2-21 are pending in the instant application. Claim 1 stands canceled. Claim 14 has been amended to correct a typographical error. Claims 2, 8-13 and 21 have been amended to more clearly delineate the claimed invention. Support for these amendments appears throughout the specification and claims as filed. No new matter is introduced by these amendments.

Applicants make these amendments without prejudice to pursuing the original subject matter of this application in a later filed application claiming benefit of the instant application, including without prejudice to any determination of equivalents of the claimed subject matter.

**Rejection under 35 U.S.C. § 112, second paragraph**

Claims 2-21 are rejected, allegedly for being confusing and disjointed, and lacking antecedent basis for the following recited terms: aqueous process medium, hop acid, aqueous alkaline medium, aqueous alkaline hop acid solution, aqueous hop acid solution, and process medium. Applicants traverse but have amended claims 2, 8-13 and 21 to more clearly delineate the process steps and to maintain consistency in the recitation of terms.

Applicants merely wish to indicate that the hop acid is dissolved in an aqueous alkaline medium to form an aqueous alkaline hop acid solution, which is further elaborated in dependent claim 12. This aqueous alkaline hop acid solution is subsequently utilized in steps (b) and (c) of claim 2. Therefore, no new matter has been added by the above amendment.

Therefore, the terms alleged to be confusing, disjointed, and lacking antecedent basis have been amended. The rejection is thus obviated and Applicants request withdrawal of the rejection.

Claim 13 is rejected, allegedly for lacking antecedent basis. Applicants traverse but have amended claim 13 to recite "aqueous alkaline hop acid solution." The rejection is thus overcome.

Claim 21 is rejected, allegedly for being indefinite. Applicants traverse but have amended claim 21 to recite "aqueous process medium." The rejection is thus overcome.

Claims 15-19 are rejected, allegedly for extending beyond the metes and bounds of claim 14. Applicants disagree but have amended claim 14 (from which claims 15-19 depend) to recite "isomerized hop acid." Support can be found at page 11, lines 12-16 of the application as filed. The rejection is thus overcome.

Rejection under 35 U.S.C. § 102(b)

Claims 2, 4-5, 8-12, and 21 are rejected as anticipated by Todd et al. (US 5,082,975). It is alleged that Todd discloses the synthesis of hexahydrolupulone and its use as a selective inhibitor of cell growth and multiplication. Specifically, it is alleged that hexahydrolupulone inhibits *Lactobacillus acidophilus* growth and fermentation in skim milk media.

Applicants traverse, but have amended claim 2 to introduce a process step wherein the aqueous alkaline hop acid solution is combined with yeast, and that the yeast hop acid mixture is added to the aqueous process medium. Support for the amendment can be found at least at example 5 and figure 2 of the instant specification. Example 5 provides for one hop acid stream to feed a yeast growing tank, and another hop acid stream to feed a fermentation tank (aqueous process medium). Figure 2 shows that the two tanks are connected so that the yeast tank is transferred to the fermentation tank. Claim 2 as amended clearly indicates that the process medium (pre-fermentation) contains hop acids. Claim 2 also indicates that the yeast solution, which is added to the process medium, contains hop acids.

In contrast, Todd discloses a method of using hexahydrolupulone to inhibit the growth of certain bacteria in milk. Example 6 (column 7 line 46 to column 8 line 13) exemplifies the method used by Todd to treat milk that has been inoculated with *Lactobacillus acidophilus*. A solution of hexahydrolupulone is simply added to the inoculated milk solution. Todd does not provide for a milk solution that has been treated with hop acids prior to bacteria inoculation.

Therefore, it is clear that the instant invention is distinct from Todd (US 5,082,975), at least in the steps of the process. The instant invention includes the use of hop acids in both the yeast growing tank to form the yeast hop acid solution, and the use of hop acids in the aqueous process medium (fermentation tank). Thus, the process provided by the instant invention is distinct from Todd. Reconsideration and withdrawal of the rejection is requested.

Rejection under 35 U.S.C. § 103(a)

Claims 2-10, 12, 13, and 21 are rejected as obvious over the Newsletter of the Bayside Brewers Club ("Bayside") as evidenced by Haas Products & Applications ("Products"). Applicants disagree and respectfully traverse.

It is asserted in the Action that Bayside utilizes the same ISOHOP that is used in the instant invention. It is then concluded that Bayside renders the Applicants' instantly claimed subject matter *prima facie* obvious. Applicants disagree and respectfully traverse.

Applicants indicate that Bayside does not teach or suggest the instant application, especially in view of the amendments to claim 2. Specifically, Bayside does not provide an improved process for controlling micro-organisms in an aqueous process medium. Bayside does not teach or suggest combining the aqueous alkaline hop acid solution with yeast to form a yeast hop acid solution, and introducing the yeast hop acid solution into the process medium. Last, Bayside does not teach or suggest continuously adding an effective amount of the aqueous alkaline hop acid solution, pre fermentation, to the aqueous process medium, wherein the pH of the aqueous alkaline hop acid solution is higher than the pH of the aqueous process medium and wherein the hop acid is in free acid form. Bayside simply provides for the addition of isohops to impart a bitter flavor to beer.

To establish a *prima facie* case of obviousness, three criteria need be met: (i) there must be a suggestion or motivation to modify the reference or combine the teachings; (ii) there must be a reasonable expectation of success; and (iii) the prior art reference must teach or suggest all the claim limitations. See, MPEP 2143. Applicants submit that Bayside does not teach or suggest all the claim 2 limitations. The rejection is thus overcome.

Additionally, Applicants traverse the allegation in the Action that the Bayside "isohop" is the same as the use of ISOHOP ® in the instant application. Bayside does not provide any suggestion that their isohop is anything more than a generic isohop material that has an alpha-acid rating of 30%. The assertion in the Action that any reference to "isohop" in Bayside must be the same material as ISOHOP ® is an overbroad interpretation and is not supported by the art. Applicants' reference to ISOHOP ® does refer to the material of that trademark. Bayside only references "isohop" generically and no further extrapolation that Bayside "isohop" refers to ISOHOP ® can be reliably made.

The Examiner also states that the Applicants allegedly positively and directly supported the position of the Office regarding the above rejection (page 6 of the Action). Applicants indicate that the last section of claim 2, which reads "wherein the hop acid is in free acid form," is clearly NOT referring to the free hop acids that are added to the process medium. Those of ordinary skill in the art will realize that hop acids subjected to alkaline solutions (part (a) of claim 2) are converted to the corresponding salts for the purposes of solubility. After addition to the process medium (part (b) of claim 2), which has a lower pH than the aqueous alkaline hop acid solution, the hop acids are converted from salts to free acids. Therefore, the skilled artisan will immediately recognize that the free acids are converted from the corresponding salts in the process medium.

Claims 11 and 14-20 are rejected over alleged Applicants' admissions (pages 2-4 of the specification) in view of Haas Products and Applications ("Products"). Applicants traverse.

Applicants submit that the rejection based on Products is improper as Products is not citable prior art. Applicants filed this application on March 6, 2000. The effective prior art date of Products in the Action (and Form PTO-892 from the Office Action dated May 28, 2004) is identified as 2001. As such, Applicants' filing date predates the prior art date of Products is improper. Furthermore, even if asserted to show properties of "isohop", the citation is insufficient to support the rejection. Therefore, because "Products" is not citable prior art, Applicants request withdrawal of the rejection.

Nonetheless, the assertion in the Action that "Applicants admit that '[s]ome distilleries [use hop acid] to control bacteria problems'" is a mischaracterization. Furthermore, Applicants make no such admission, nor does Products (alone or in combination) teach or suggest the desirability of using an alkaline hops acid solution to control micro-organisms in a process medium as delineated in the pending claims. As such, Applicants submit a *prima facie* case is not established and the rejection should be withdrawn.

Claims 1-13 and 21 are rejected as obvious over Guzinski et al. (WO 97/33971), in view of Hough et al. (Malting & Brewing Science). Claim 1 was previously canceled and Applicants believe that claims 2-13 and 21 are allegedly rejected. It is asserted in the Action that: (1) Guzinski discloses the production of hop acid salts in microparticulate form; and (2) Hough et al. teaches a general method of brewing, where hops are added. It is then concluded that the combination of (1) and (2) renders the Applicants' instantly claimed subject matter *prima facie* obvious, in part because (1) also provides the suggestion that the hop acids are easily used in the brewhouse.

Applicants traverse the rejection, but indicate that claim 2 has been amended.

Applicants wish to point out that Guzinski describes microcrystalline salts of dihydroisoalpha acids (DHIA) and hexahydroisoalpha acids (HHIA). Examples 1-9 of Guzinski are directed towards methods of crystallizing DHIA or HHIA, and methods of solubilizing the crystals of DHIA or HHIA in solution. Examples 1-4 and 7-8 involve preparation of different hop acid solutions. Examples 5 and 6 include slightly more elaborate reaction conditions to monitor bitterness, aroma, and foam. Example 9 is directed towards the solubility of the Guzinski hop acids in finished beer. That is, the Guzinski hop acids are injected into a finished beer product.

Guzinski, in view of Hough, does not teach or suggest Applicants' claim 2 as amended. Specifically, the combination of references does not provide for an improved process for controlling micro-organisms in an aqueous process medium comprising adding a hop acid, characterized in, that the process comprises: (a) dissolving the hop acid in an aqueous alkaline medium to form an aqueous alkaline hop acid solution; (b) combining the aqueous alkaline hop acid solution with yeast to form a yeast hop acid solution, and introducing the yeast hop acid

solution into the process medium; and (c) continuously adding an effective amount of the aqueous alkaline hop acid solution, pre fermentation, to the aqueous process medium, wherein the pH of the aqueous alkaline hop acid solution is higher than the pH of the aqueous process medium and wherein the hop acid is in free acid form.

Guzinski in view of Hough, does not teach or suggest all the claim 2 limitations and thus cannot necessarily be taken as a teaching of Applicants' subject matter. Specifically, Guzinski in view of Hough does not teach or suggest combining the aqueous alkaline hop acid solution with yeast to form a yeast hop acid solution, and introducing the yeast hop acid solution into the process medium. Also, Guzinski in view of Hough does not teach or suggest continuously adding an effective amount of the aqueous alkaline hop acid solution, pre fermentation, to the aqueous process medium, wherein the pH of the aqueous alkaline hop acid solution is higher than the pH of the aqueous process medium and wherein the hop acid is in free acid form. Additionally, a *prima facie* case based on Guzinski is not established at least for failure to provide motivation to use the Guzinski disclosure to teach the claimed subject matter, or for failure to provide a reasonable expectation of success. Based on the foregoing, Applicants submit that the teachings in Guzinski et al., in view of Hough, do not teach or suggest Applicants' claimed subject matter. Applicants request withdrawal of the rejection.

#### Provisional Rejection – Obviousness-type Double Patenting

Claims 2-21 are provisionally rejected in view of Application No. 10/361,976. Applicants submit that this provisional rejection should be withdrawn in view of the fact that the application has not matured into a patent as of yet.

Claims 2-21 are provisionally rejected under the judicially created doctrine of double patenting in view of claims 1-25 of US Patent 6,893,857. Applicants traverse but will file a terminal disclaimer upon allowance of the instant claims.

#### Conclusion

In view of the above remarks, Applicants believe the pending application is in condition for allowance. Should any of the claims not be found to be allowable, the Examiner is

Application No. 09/520,004  
Amendment dated December 5, 2005  
Reply to Office Action of July 5, 2005

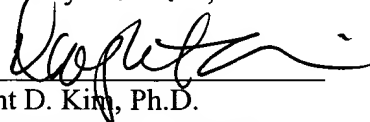
Docket No.: 61755(51035)

requested to telephone Applicants' undersigned representative at the number below. Applicants thank the Examiner in advance for this courtesy.

The Director is hereby authorized to charge or credit any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 04-1105, under Order No. 51035-61755.

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